

10/11/13

Agenda

- Opener
- Review Homework - Worksheet 2.4
- Section 2.5 - Literal Equations
- Start Homework

Homework - Worksheet 2.5

- (Problems 1 - 11, pick any 5 of them)
- (Problems 12 - 16, pick any 3 of them)

Homework out!

Warmup, solve the following equations.

$$\begin{array}{r} t=2 \quad t=4 \\ 5t-9 = -3t+7 \\ +3t \quad +3t \\ \hline 8t-9 = 7 \\ +9 \quad +9 \\ \hline 8t = 16 \\ \frac{8}{8} \quad \frac{16}{8} \\ t = 2 \end{array}$$

Tell me:

- 1 solution
- Identity
- No Solution



$$5x+2x-3 = -3x+10x$$

$$\begin{array}{r} 7x-3 = 7x \\ -7x \quad -7x \\ \hline \end{array}$$

$$-3 = 0$$

FALSE

No Solutions

Section 2.5 - Literal Equations

Target 2C

Goal: Rearrange equations to isolate (solve for) a specific variable.

Essential Understanding: When you work with literal equations, you use the same methods as with 'regular' equations.

SOLVE FOR

Literal Equations: Equations with two or more different variables in them.

Ex. $10x + 5y = 80$

$A = bh$

$I = prt$

$P = 2l + 2w$

$C = 2\pi r$

$C^\circ = \frac{5}{9}(F^\circ - 32)$

Solving Literal Equations:

This is no different than solving $2x+3=19$. However, we may not get a numeric answer. We are just rearranging the equation to solve for another variable.

Let's try one:

$$\begin{array}{r} 10x + 5y = 80 \\ -10x \quad -10x \\ \hline 5y = 80 - 10x \\ \hline \end{array}$$

Solve for y :

$y = 16 - 2x$

what
value
when

$x = 5$

$$\begin{aligned} y &= 16 - 2(5) \\ y &= 16 - 10 \\ y &= 6 \end{aligned}$$

$4 = 2m - 5n$

Solve for m .

$$\begin{array}{r} +5n \quad +5n \\ \hline \frac{5n+4}{2} = \frac{2m}{2} \end{array}$$

$m = \frac{5}{2}n + 2$

$\frac{5}{2}n + 2 = m$

$$2b \left(\frac{a+c}{2b} \right) = 9(2b)$$

Solve for c .

$$C = 18b - a$$

$$a + c = 18b$$

$$\begin{array}{r} -a \\ \hline c = 18b - a \end{array}$$

You try!

$$V = lwh$$

$$w = \frac{V}{lh}$$

REARRANGE

Solve for w .

$$C = 2\pi r \quad r = \frac{C}{2\pi}$$

Solve for r .

$$\begin{array}{r} 12x - 4y = 20 \\ -12x \quad -12x \\ \hline -4y = 20 - 12x \\ \hline -4 \quad -4 \quad -4 \end{array} \quad y = -5 + 3x$$

Solve for y .

Summary:

Solving literal equations is just like solving equations. Just make sure you look at which variable you want to solve for. Treat each term as an object and move them by "undoing" operations.